

ACCESS TO RESEARCH INFRASTRUCTURES

HELMHOLTZ-CAS WORKSHOP, 26 September 2022

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Helmholtz Zentrum Berlin für Materialien und Energie



Large Scale Facilities – Use, Access, Challenges







SYNCHROTRONS OF THE WORLD



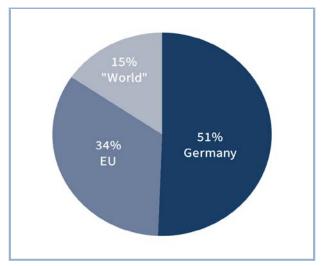


The world is visting **BESSY**



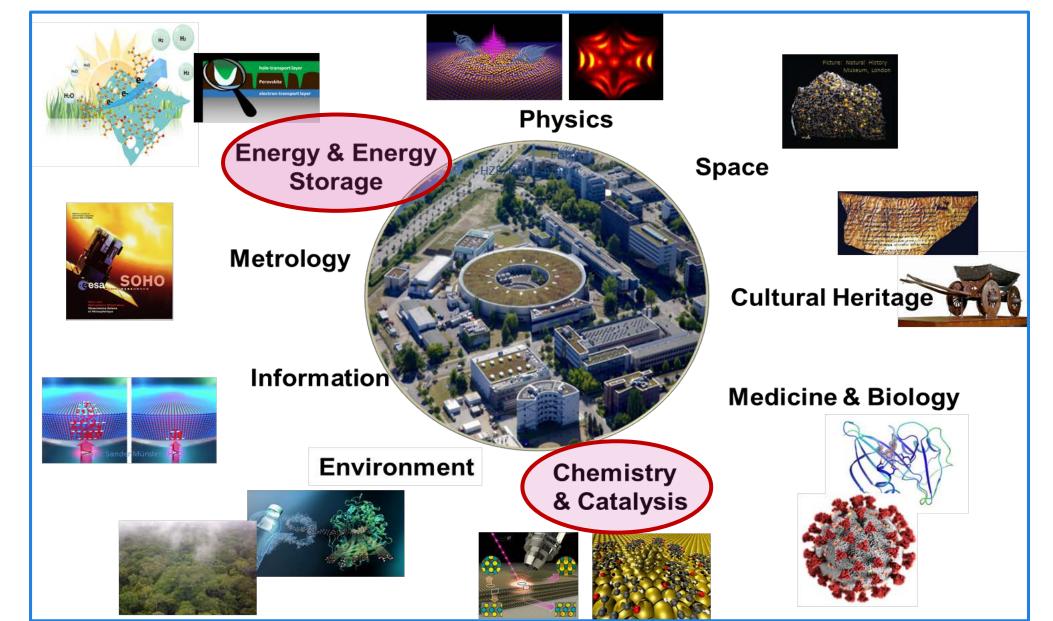
Origin of proposals BESSY II (2014 - today)





Average numbers per year (before Corona):

- More than 1200 proposals per year
- About 800 beamtime campagnes
- Up to 3000 user visits
- More than 11000 registered users
- 12000 overnight stays in the guesthouse
- More than 500 verified publications

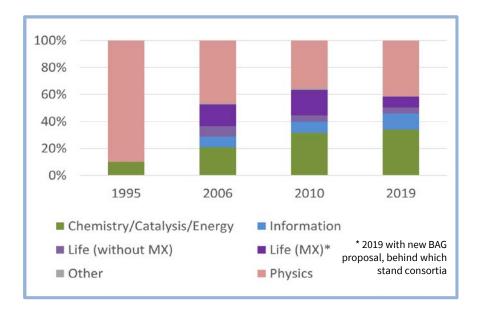


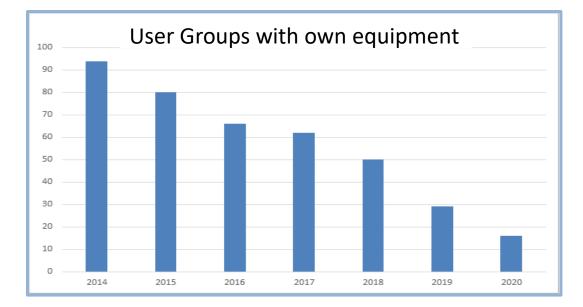
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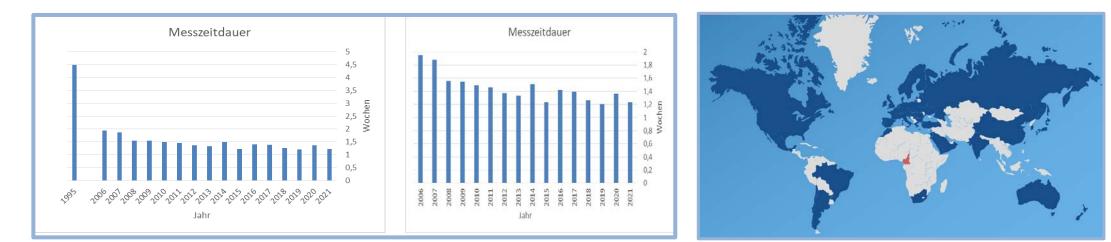
_eads 6 new user requirements

CHALLENGES

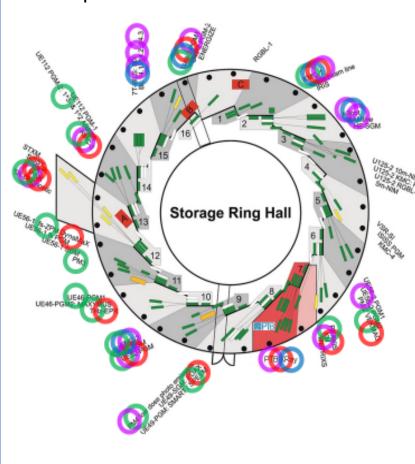
The user community is changing







CHALLENGES



Sample Environment Activities 2021

Technical developments

Optimization and repair (of existing SE equipment)

Development (of novel SE)

Consulting (of new beamline projects)

User service

Provision and setup (of modular and complex SE)

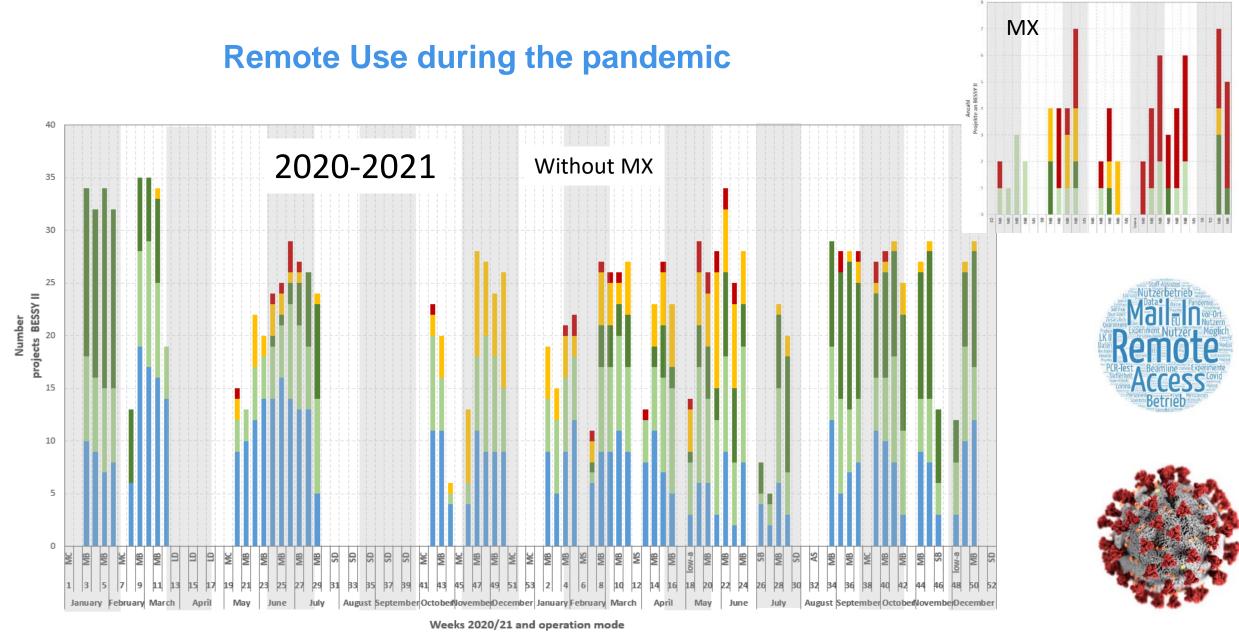
Presently working for: 28 endstations (26 beamlines)

In contact with: 41 endstations (32 beamlines)

- More "non-synchrotron-expert-users"
- Shorter beamtimes
- Faster data aquisition
- More use of facility infrastructures
- More use of corrsponding offline infrastructure
- More international users



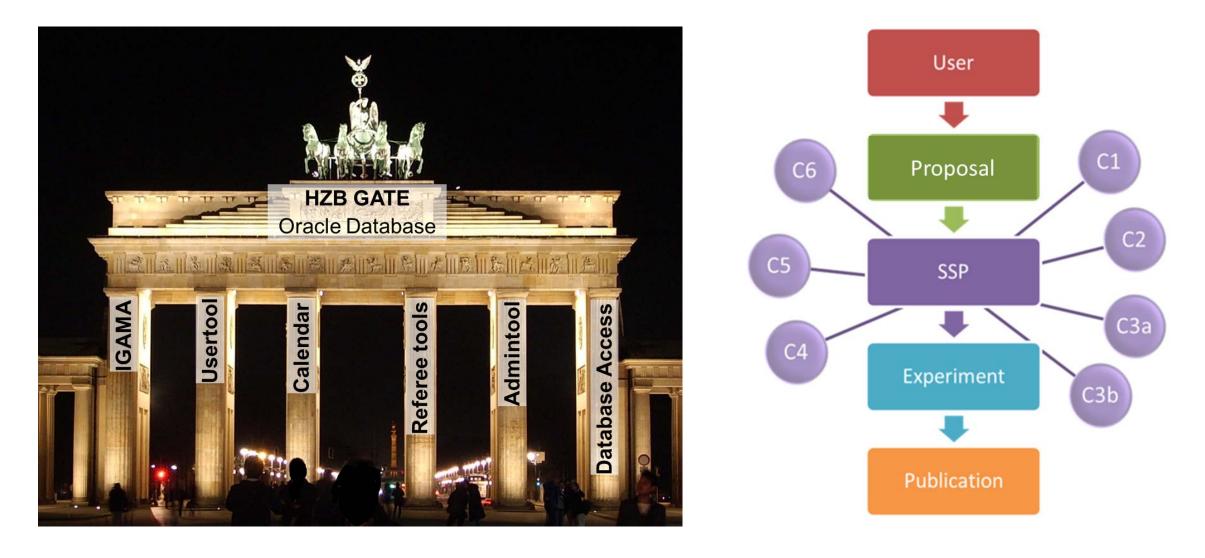
- More support from pre to post beamtime
- More flexibility
- More sample environment
- Holistic data handling



Blue: HZB, light green: users from the Berlin area, dark green: external users (except Berlin), yellow: staff assisted beamtime, red: remote beamtime



User and user management



Proposal, Evaluation, Beamtimeallocation, Scheduling, Feedback, Statistics, Funding etc. are managed in GATE

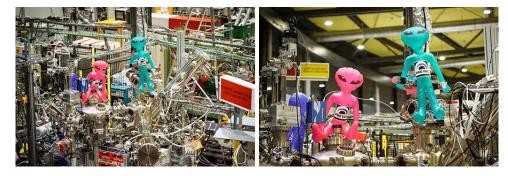
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Calendars send automatic allocation/sched ule notes to the users

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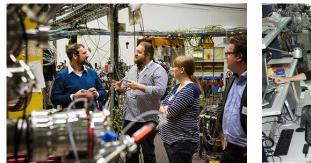




Stopp, sorry not yet... don't forget your: user registration, access cards, safety instructions, guesthouse reservation, ...

Hurrah, it's beamtime!

Now it's beamtime 🙂







The view of the users

Time between proposal and beamtime too long – more flexibility desirable

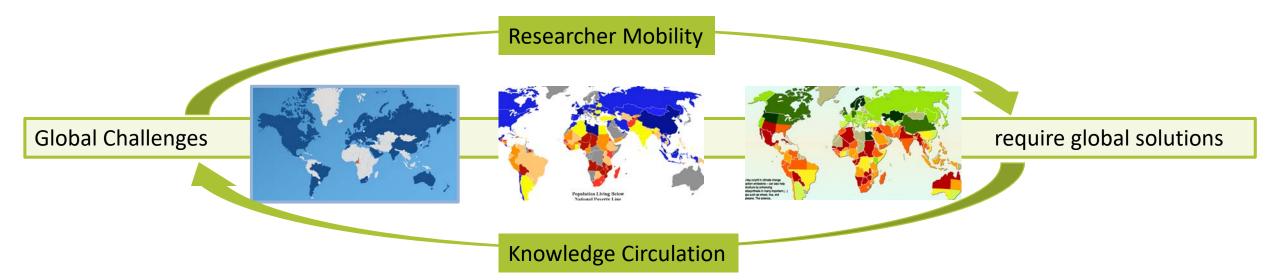
Support for German users (travel, guesthouse) granted – no access costs

No access costs for European or World Users however, no more travel and subsistance support via "trans national access (TNA) programmes

Consequence

already cancellation of beamtime or less proposals from poorer countries

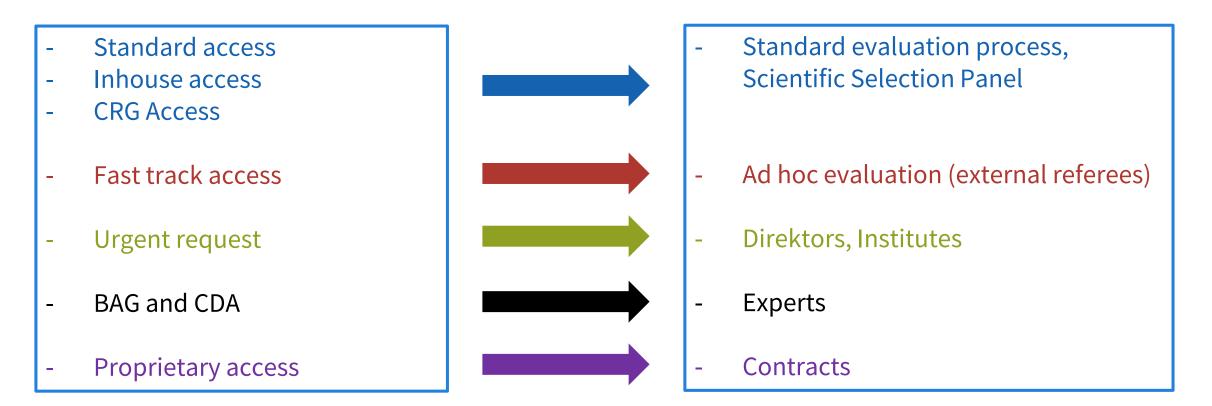
Success of previous integration and inclusion programmes under jeopardy \rightarrow topical/challenge oriented funding?





Standards and novelties

The increasingly divers user community need flexible access



For all typs of access: they should be possible on site, staff assisted as well as fully remote

The BESSY II User Coordination has established and applies a Quality Management System for the

Coordination of and service For the use of scientific infrastructures.



The Quality Management is certified According ISO 9001:2015 (TÜV SÜD Service GmbH).

Performance Indicators

Certification and



A2 Overview to Key Performance Indices (KPI) 2016 - 2021

Overview to Key Performance Indices (KPI) 2016 -2021

User feedback rate 2016: 80 % 2017: 68 % 2018: 64 % 2019: 48 % 2020: 39 % 2021: 64 %

Surveillance audit successfully passed in 2018, 2019, 2021

Recertification audit sucessfully passed in 2020



O: Scientific Output	2016	2017	2018	2019	2020	2021			
O1 Beamtime (Shifts≙8 hours) per Publication	21.7	26.9	20.3	20.9	15.7 ²	39.7 ³			
O2 Publications multiplied by Impact Factor	2381	1896	2317	2228	2493	2770			
O3 Number of Theses	14	15	42	27	23	17			
O4 Citation Rate for Publications from 2013-2018	12.8	14.3	16.0	15.2	16.7	15.7			
I: Outstanding Infrastructure									
11 Threshold Rate (external/internal)	6.1/5.7	5.7/5.6	6.4/6.7	6.5/6.4	6.5/6.6	6.7/7.2			
12 Satisfaction with Infrastructure	91% (1.92)	95% (1.50)	96% (1.41)	95% (1.45)	96% (1.36)	96% (1.37)			
13 Down Times / Reliability Rate	98.0%	99.6%	96.0%	94.0%	97.0%	96%			
S: High User Satisfaction									
S1 Recommendation Rate	94% (1.62)	95% (1.54)	95% (1.46)	95% (1.47)	96% (1.42)	96% (1.38)			
S2 Satisfaction with Administration	92% (1.84)	95% (1.53)	94% (1.57)	94% (1.56)	95% (1.53)	95% (1.53)			
S3 Allocation Transparency	90% (2.02)	90% (2.01)	90% (1.97)	91% (1.85)	89% (2.11)	90% (2.00)			
S4 Comparison with Other Facilities	91% (1.92)	92% (1.84)	92% (1.79)	93% (1.71)	91% (1.94)	92% (1.82)			
S5 Satisfaction with Beamtime	91% (1.94)	93% (1.68)	94% (1.63)	93% (1.67)	93% (1.70)	93% (1.67)			
S6 Publication Rate with HZB Co-Authors	33%	32%	28%	30%	44%	43%			
D: Creation of Demand									
D1 Number of New Departments	146	116	119	124	114	63			
D2 Overbooking	180%	196%	197%	209%	193%	179%			
D3 EU-Institutes	132	157	161	168	170	107			
D4 Non-EU Institutes	58	78	98	95	112	86			
D5 German Institutes	96	96	89	94	90	83			
D6 Departments	409	396	412	403	405	306			
D7 Fields of Work According to DFG	Yes, see D7 (page 45)								
D8 Number of Proposals (submitted)	1195	1199	1178	1559	1417	818 ⁴			

² Due to the pandemic lockdowns the amount of beamtime available in 2020 was significantly lower than in previous years, while the number of publications stayed constant. This results in more publications per beamtime.

³ Compared to 2020 the amount of beamtime in 2021 more than doubled. This results in a higher number of shifts per publication since the publications also include previous years beamtimes.

⁴ In 2021 one proposal round was limited to urgent access due to corona backlog, which results in a smaller number of proposals.



Thank you very much for your attention

